

1 What is claimed is:

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3 1. A filter assembly of a washing machine, comprising:

4 a filter case comprising:

5 inlet and outlet on a circumference thereof; and

6 an opening therein to make the inlet and outlet communicate with each other;

7 and

8 a filter provided in the filter case, the filter having a plate disposed in front of the

9 opening to prevent a heavy particle from passing through the opening wherein the heavy

10 particle is gathered in a central area by a centrifugal force when water flowing in the filter

11 case via the inlet whirls to pass through the opening.

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13 2. The filter assembly of claim 1, wherein the filter case is cylindrical.

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15 3. The filter assembly of claim 2, wherein the inlet is provided on an outer

16 surface of the filter case along a tangent direction.

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18 4. The filter assembly of claim 1, wherein the plate and the opening are circular.

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20 5. The filter assembly of claim 1, wherein the filter case comprises:

21 a tube having the inlet and outlet on the circumference;

22 a partition wall provided in the tube to partition an internal space of the tube into first

23 and second chambers communicating with the inlet and outlet, respectively; and

24 the opening perforating the partition wall.

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26 6. The filter assembly of claim 5, wherein the inlet is provided on an outer
27 surface of the tube along a tangent direction.

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29 7. The filter assembly of claim 5, wherein an impeller is provided in the second
30 chamber to forcibly circulate the water by being rotated by a motor.

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32 8. The filter assembly of claim 5, wherein the filter is provided in the first
33 chamber.

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35 9. The filter assembly of claim 1, wherein the filter comprises:
36 a cap fitted to the filter case to be fixed thereto;
37 a shaft extending from the cap toward the opening; and
38 the plate provided at an end of the shaft to be disposed in front of the opening with a
39 predetermined gap.

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41 10. The filter assembly of claim 9, wherein the shaft is disposed along a central
42 axis of the filter case.

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44 11. The filter assembly of claim 9, wherein the filter is built in one body.

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46 12. The filter assembly of claim 9, wherein a size of the plate is larger than that
47 of the opening.

49 13. The filter assembly of claim 9, wherein an edge of the plate is overlapped
50 with a rim of the opening.

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52 14. The filter assembly of claim 9, wherein the filter further comprises a handle
53 extending from the cap to facilitate to be grabbed.

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55 15. A filter assembly of a washing machine, comprising:
56 a filter case comprising:
57 a tube having inlet and outlet on a circumference thereof;
58 a partition wall provided in the tube to partition an internal space of the tube
59 into first and second chambers communicating with the inlet and outlet, respectively;
60 and
61 the opening perforating the partition wall; and
62 a filter comprising:
63 a cap fitted to the filter case to be fixed thereto;
64 a shaft extending from the cap toward the opening; and
65 a plate provided at an end of the shaft to be disposed in front of the opening
66 with a predetermined gap to prevent a heavy particle from passing through the
67 opening wherein the heavy particle is gathered in a central area by a centrifugal force
68 when water flowing in the first chamber via the inlet whirls to pass through the
69 opening.

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71 16. The filter assembly of claim 15, wherein the tube is cylindrical and the inlet
72 is provided on an outer surface of the tube along a tangent direction.

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74 17. The filter assembly of claim 15, wherein the plate and the opening are

75 circular.

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77 18. The filter assembly of claim 15, wherein an impeller is provided in the

78 second chamber to forcibly circulate the water by being rotated by a motor.

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80 19. The filter assembly of claim 15, wherein the shaft is disposed along a central

81 axis of the tube.

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83 20. The filter assembly of claim 15, wherein the filter is built in one body.

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85 21. The filter assembly of claim 15, wherein a size of the plate is larger than of

86 the opening.

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88 22. The filter assembly of claim 15, wherein an edge of the plate is overlapped

89 with a rim of the opening.

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91 23. The filter assembly of claim 15, wherein the filter further comprises a handle

92 extending from the cap to facilitate to be grabbed.